**Study guide for 9 weeks test**

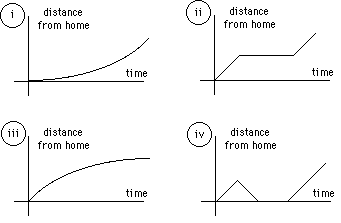
Chemistry:

* Group 1 has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 2 has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 13 has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 14 has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 15 has \_\_\_\_\_\_\_\_\_\_\_\_\_\_, 16 has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 17 has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 18 has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Which groups on the periodic table (1, 2, 13, 14, 15, 16, 17, 18) want to bond with each other?
* What is the stable number of valence electrons all elements are trying to get?
* From an elements location on the periodic table, you can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* N2 + 3 H2 = 2 NH3 How many atoms of Hydrogen are used in this reaction?
* During a chemical reaction, a new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is formed.
* Who organized the periodic table?
* Mechanical energy comes from parts that \_\_\_\_\_\_. Chemical energy is stored in \_\_\_\_\_\_\_\_\_\_.
* The left side of the periodic table is \_\_\_\_\_\_\_\_\_\_\_\_ (the table is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). The right side of the table is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* What type of charge do protons have? Neutrons? Electrons?
* Acids measure\_\_\_\_\_\_\_\_\_\_\_on the pH scale. Bases measure \_\_\_\_\_\_\_\_\_\_ on the pH scale.

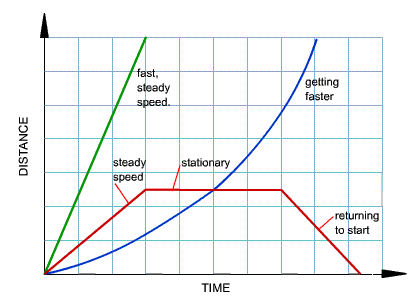
Physics (Force and Motion):

* How do you calculate speed?
* An increasing velocity is a line that increases from left to right
* Define each of Newton’s 3 Laws of Motion
* Identify the graph that matches each of the following stories:
  1. I had just left home when I realized I had forgotten my books so I went back to pick them up.
  2. Things went fine until I had a flat tire.
  3. I started out calmly, but sped up when I realized I was going to be late.
  4. I started off walking quickly to school, but slowed down when I realized I would be too early.
* Examples of speed: 5 meters/second, 60 miles/hour
* Speeding up, acceleration is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, slowing down acceleration is \_\_\_\_\_\_\_\_\_\_\_\_.
* Predict where the cart will be at 5 seconds: (85 meters)



* If two skateboarders collide at this angle, draw arrows for the equal opposite angles they will have to follow after the collision.
* A farmer with a load of hay on a truck found that the truck would not accelerate fast enough. **What would be the easiest way to increase the truck’s acceleration?**
  1. Put more as in the truck c. remove some hay from the truck
  2. Bundle the hay into tightly-packed bales d. Put more hay on the truck.
* A person must constantly exert a force on a heavy box to keep it sliding across a carpeted floor at a constant speed. This force is mostly needed to oversome…?
  1. Air resistance c. Frictional force between box and carpet
  2. The weight of the box d. Gravitational force between Earth and box

Remember about speed/acceleration graphs:



Slow steady speed

Extra :

* If making an observation, you use things like your sense of \_\_\_\_\_\_\_\_\_\_\_, and record anything you observe such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* When protecting your clothes, wear lab safety gear like \_\_ \_\_\_\_\_\_\_\_\_\_\_\_. When protecting your body, wear \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_ over what you are already wearing.
* Companies who do experiments are usually testing for ways to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.